

# MAGNA-VIEW™ ELECTRIC TV/MONITOR CEILING MOUNT

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## INITIAL TESTING AND SET-UP

The unit has been thoroughly tested at the factory before shipping. However, we suggest testing the unit before installation to be sure no damage occurred during shipping.

## TESTING PROCEDURES

1. Temporarily suspend Magna-View assembly using means illustrated in FIGURE 2 or use another means as necessary.
2. Plug unit into an appropriate voltage outlet.
3. Using a jumper wire, a piece of insulated wire about 4" long with each end striped about 1/4", make momentary contact between Terminal ⑥ and Terminal ① or ⑩. This momentary contact tells the unit to start the motors. Make contact again and the motors will stop, make one more contact and the motors will go in the opposite direction they were last going in. See FIGURE 14- Terminal Block.

**WARNING:** TO AVOID DAMAGE BE SURE ALL MOVING COMPONENTS WILL NOT COLLIDE WITH FLOOR OR ANY OTHER OBSTRUCTION WHILE RUNNING UNIT.

After testing unit, leave it in its fully extended position to assist in installation.

**NOTE:** *Magna-View will support its own weight when extended.*

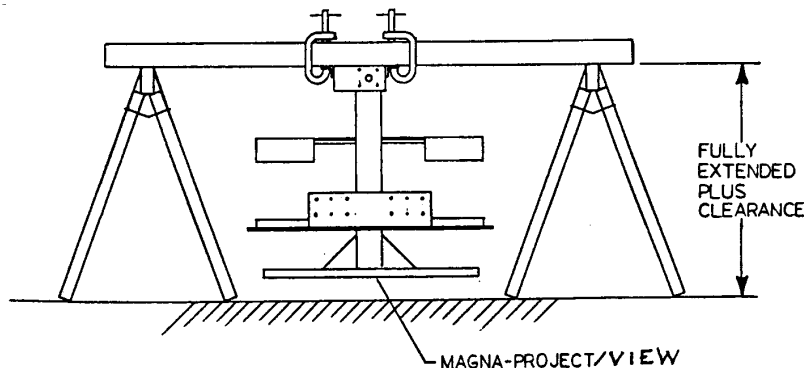


FIGURE 2

## CEILING OPENING LOCATION AND PREPARATION

Carefully select the position and distance of the ceiling opening from the screen. This will require knowing the lens to screen distance, the combined length of projector plus cable connectors if they protrude past the housing, and the required ceiling opening. FIGURE 3 below may help you to calculate the distance (F dimension) from the front edge of the ceiling opening to the screen. (See also projector specifications for set-up.)

**NOTE:** When adjusting the aim of the projector, the cradle supporting the projector can be adjusted front to rear by sliding 2-1/4" in each direction.

**WARNING: IMPROPER INSTALLATION MAY RESULT IN SERIOUS PERSONAL INJURY!** ALL COMPONENTS MUST BE SECURELY FASTENED TO EACH OTHER AND TO THE CEILING, AND THE CEILING **MUST** BE CAPABLE OF SUPPORTING 5 TIMES THE SUSPENDED LOAD OF MAGNA-VIEW PLUS ALL ADDITIONAL EQUIPMENT. IF IT CANNOT, THE CEILING **MUST** BE REINFORCED.

## BOXED IN STRUCTURAL CEILING

Mounting to a boxed in structural ceiling as shown in FIGURE 4. During the construction of the ceiling opening, be sure the dimensions are precise, especially the width of the square. The structural members that will be supporting the weight of the unit should be able to support five (5) times that of the Magna-View plus all equipment. If needed, you may, in conjunction with using the boxed in structural ceiling, support the unit using 1/2" threaded rod bolted from the top of the unit to another structure above, suspending the unit as illustrated in FIGURE 5.

FIGURE 3  
CEILING LOCATION

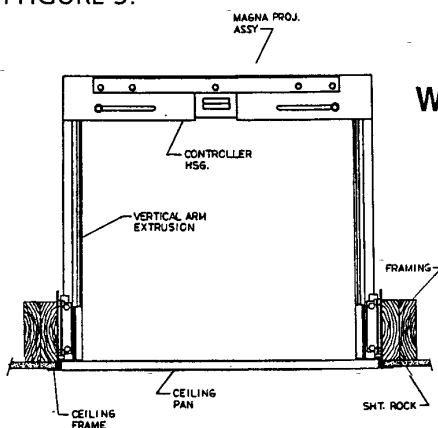
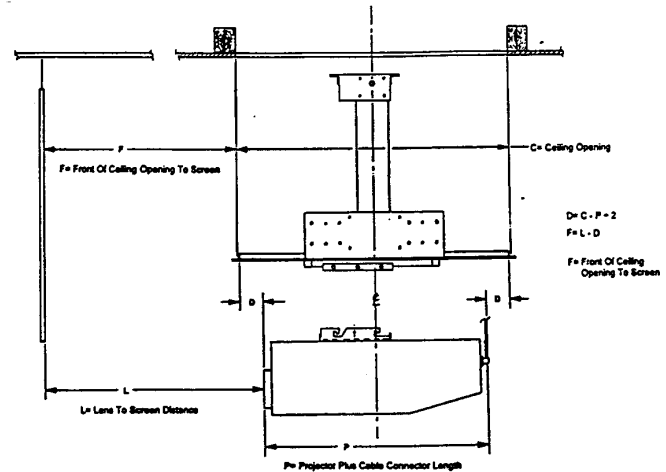
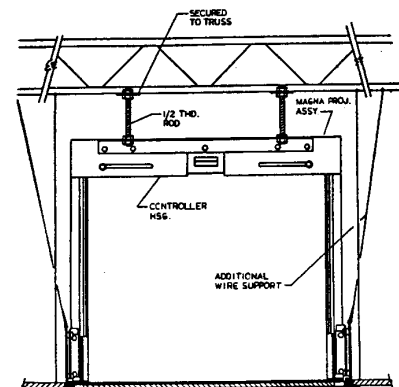


FIGURE 4  
WOOD FRAME  
CEILING

FIGURE 5  
SUSPENDED  
CEILING



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After the boxed in ceiling is completed, you need to install an outlet and route the communications signal and control cabling to an appropriate location near the top of the unit. See FIGURE 1.

If there is no dry wall or other covering, now is the time to install any such covering to the ceiling. Keep the edge of the covering 1/8' to 3/8' back from the edge of the framed in ceiling opening. See Figure 6.

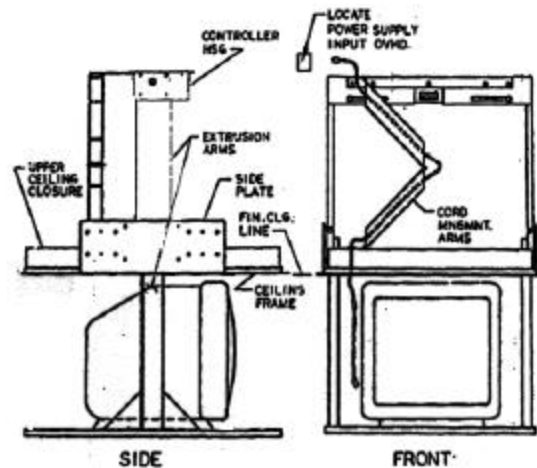
Remove the ceiling frame from the unit. To do so, remove the eight (8) 1/4-20 x 3/8' bolts and washers that attach the connecting brackets to the side plates, which are welded to the ceiling frame. When the ceiling frame is free, raise it up off the rest of the unit. See FIGURE 7.

Now install the ceiling frame into the ceiling. The large side plate should be installed 90° to the front of your equipment. It should be up flush all around the perimeter. Using drywall screws in special holes provided, two (2) on each side plate, temporarily secure ceiling frame into position. See FIGURE 7. Measure to see if the side plates are square vertically and straight across from each other.

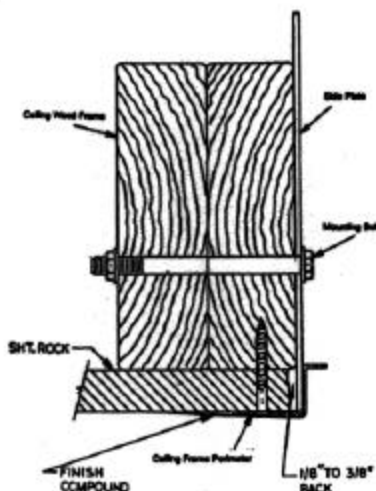
**NOTE: These measurements most important. They insure easy installation and proper function of unit. If any errors are found correct them by remounting or shimming until corrected.**

Once ceiling frame is correctly positioned, bolt in place using four bolts per side in the holes best suited for your frame work. Through bolting is the best method using 5/16" bolts as shown in FIGURE 6. **DO NOT OVERTIGHTEN.**

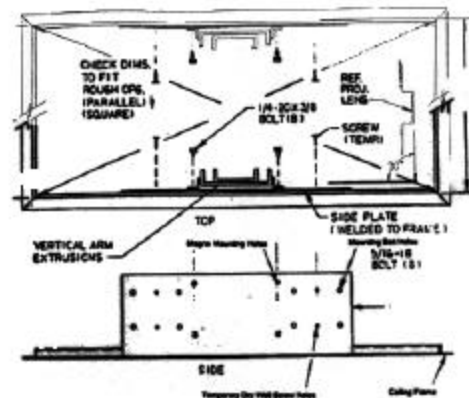
**FIGURE 1  
MAGNA-VIEW  
(Extended Position)**



**FIGURE 6**



**FIGURE 7  
CEILING  
FRAME**



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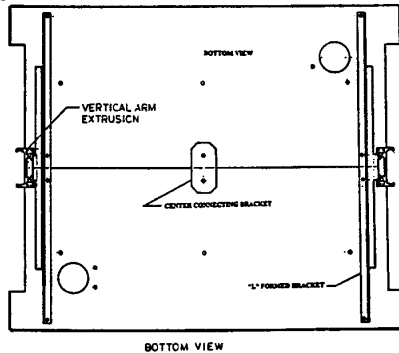
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Now that the ceiling frame is in place, the rest of the unit may be installed.

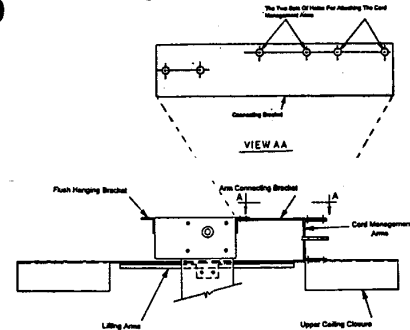
Extend the unit to its maximum length. Remove the upper ceiling closure:

1. Disconnect the cord management connecting bracket from the unit.
2. Remove the two (2) "L" form brackets and one (1) center bracket that connects the two (2) halves of the upper ceiling closure together. See FIGURES 8 and 9 below.
3. Remove the two halves of the upper ceiling closure. Store these components for re-assembly later.

**FIGURE 8**



**FIGURE 9**



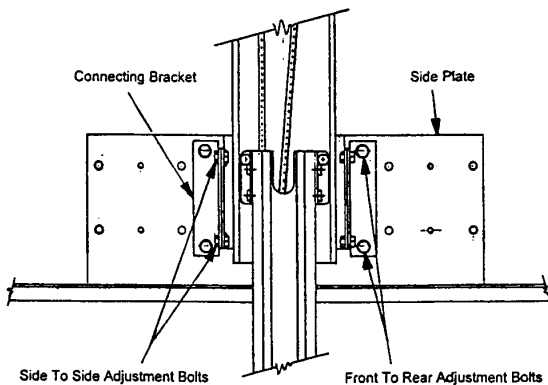
Loosen the bolts that mount the connecting brackets to the adapter plate 3/4 of a turn. These loosened bolts facilitate side to side and some width adjustment.

Raise the unit into position by lifting up from below or pulling up from above. Be aware of your installation front and rear because the unit will fit into the ceiling frame either way.

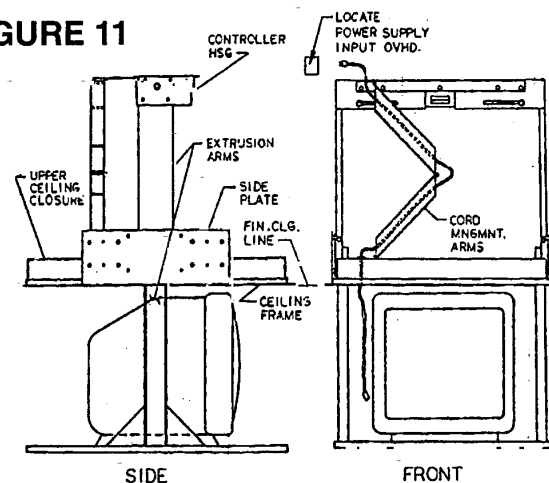
Raise the unit into the ceiling frame until the holes in the connecting brackets line up with the welded nuts on the side plates of the ceiling frame. See FIGURE 10 below.

Bolt the unit into place using eight (8) 1/4-20 x 3/8" bolts and washers. **DO NOT TIGHTEN.**

**FIGURE 10**



**FIGURE 11**



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Plug in the A/C power unit and connect your controls that operate the unit. Raise the shelf until it gets close to the ceiling frame then stop it right before it enters. Check the alignment and adjust so there is an even amount of space on all sides between the lower ceiling closure and the ceiling frame. With the connecting bracket bolts slightly loose, the unit can be adjusted front to rear and side to side to facilitate the alignment adjustments. After alignment is completed, lower the unit and tighten all bolts gently so not to disturb the alignment just completed. Operate the unit to its full upward travel position. If there is any collision between the lower ceiling closure and the ceiling frame, readjust until it clears.

## UPPER CEILING CLOSURE

Lower the unit to its lowest position. Install the closure with the cord management bracket to the rear of the monitor. The connecting arm bracket bolts to the flush hanging bracket shown in FIGURE 9.

Take the one-half section of the upper ceiling closure that has the cord management arms attached to it and maneuver it so it rests on top of the lifting arms and slide into position. See FIGURES 8 and 9.

Connect the top cord management arm to the connecting bracket using one of the two sets of holes that line up. Bolt in place using two (2) #10 screws and nuts.

Now route your cabling and power cords in the channels of the cord management arms. Using cable ties and electrical tape, secure the cords and cables in place. Be sure there is enough slack at the hinges and give a final check for pinch points, obstructions and sharp edges needing protection.

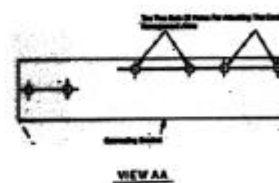
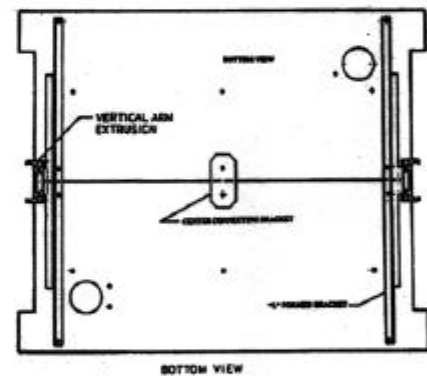
Take the remaining half of the upper ceiling closure and maneuver into place on top of the lifting arms. Attach the two halves of the inner ceiling closure together using the "L" form bracket, center bracket and screws previously disassembled. See FIGURE 8.

The upper ceiling closure lifting brackets can be adjusted up or down. This allows the closure to be set so it will still close if you choose to set the travel limit adjustment on the unit so it stops at a different point than its pre-set lowest point.

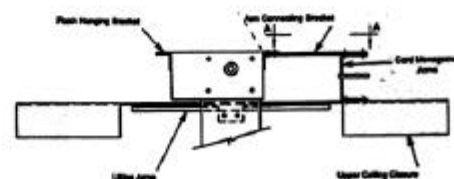
Finishing the ceiling can be done at any point after the unit is in place and operating.

Joint compound the frame perimeter and sand smooth until desired finish. See FIGURE 6 on

**FIGURE 8**  
**UPPER CEILING CLOSURE**



**FIGURE 9**



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page 3. The lower ceiling closure is painted with a primer type paint and should accept the same treatment as the rest of the ceiling (paint, spackle, filler). After the ceiling has been finished, the edges at the lower ceiling closure and ceiling frame perimeter may need cleaning. This cleaning is to insure proper clearance between mating and moving parts.

## SUSPENDED CEILING INSTALLATION

When constructing your ceiling opening in the suspended ceiling, leave the edges bare. It may be necessary to add some additional wire to support the tile channel.

There must be a power outlet, signal cable and controlling cable wired in an appropriate location above the unit.

To suspend the unit it must hang from a safe and sturdy structure. As a rule, the structure being used must hold five (5) times the weight of the unit and all equipment. If 1/2"-13 threaded rod is chosen to suspend the unit, *the hole pattern is off center approximately 1-1/8" front to rear* so be aware of which direction the unit is installed. See FIGURE 5.

There are many ways of hanging your unit from a ceiling. Chief Manufacturing can help with several unique accessories. For example: CMA-100, CMA-110, CMA-120 and CMA-200.

With the unit fully assembled, lift or winch into place. The unit should be raised to a level so the ceiling frame is flush and supporting the edges of the suspended ceiling panel main runners or cross members.

After the unit is suspended in place, you may want to add some wire ties for added rigidity from the unit side plates of the ceiling frame to the structural ceiling. See FIGURE 5.

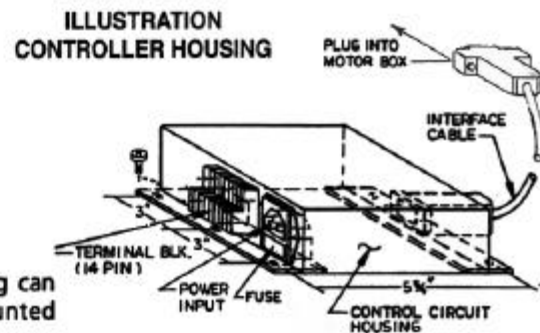
## INSTRUCTIONS FOR ELECTRICAL CONTROLLER FUNCTION

### To Connect MOMENTARY Push Button:

1. Connect one lead to Terminal ⑥ and the other lead to Terminal ① or Terminal ⑩.

### To Connect Remote Control, Model R80:

1. Connect red lead to Terminal ①, white lead to Terminal ②, and black lead to Terminal ⑥.
2. Mount remote control receiver by securing the receiving bracket to the bottom of the cabinet with the antenna away from the steel components.



The controller housing can be conveniently mounted near the motor box.

FIGURE 17



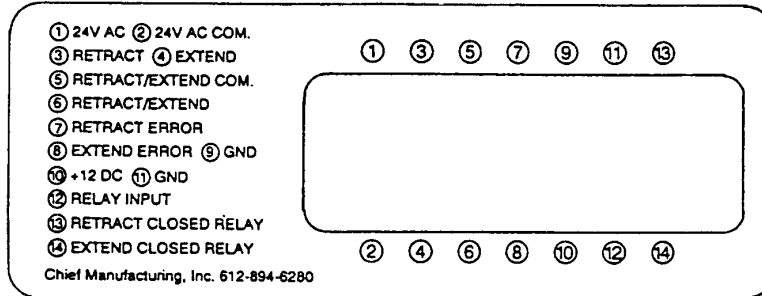
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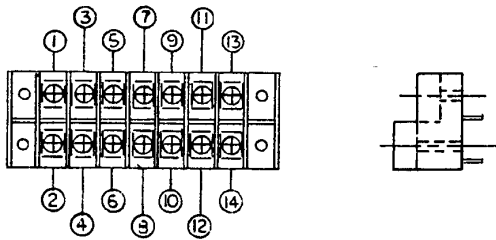
**To Connect Safety Reverse:**

1. Connect one lead to Terminal ⑨ and the other lead to Terminal ⑦ or ⑧ depending on which direction you wish to safeguard. Pressure sensitive safety strip is available.

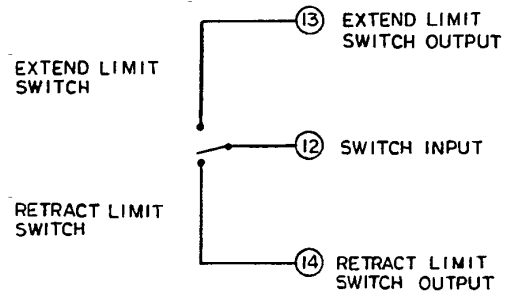
**FIGURE 13 – TERMINAL BLOCK LABEL REF.**



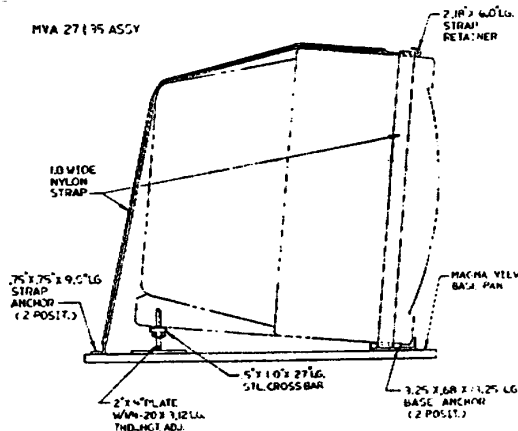
**FIGURE 14  
TERMINAL BLOCK LAYOUT**



**FIGURE 15**



RF Remote Control, Model R80, connection wire is as follows:  
Red Wire to Terminal ①, White Wire to Terminal ②, and Black Wire to Terminal ⑥.



**FIGURE 16  
MONITOR PITCH  
ADJUSTMENT ACCESSORY**



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## MAGNA SERIES LIFT CONTROLLER DIRECTIONS

The Magna-Project Series Controller is a solid state electronic circuit designed to control the Magna-Project. This circuit provides input control to extend or retract the lift. Also, the circuit has a built-in power supply that converts the 110 or 220 volt AC input into a 24V AC output.

Output 1: 24 Volt AC – Terminal ① and 24 Volt AC Common Terminal ②

Output 2: +12 Volt DC – Terminal ⑩

The 24 volt AC is supplied at Terminal ① and ② for use in powering RF remote control circuits. The +12 volt DC is supplied at Terminal ⑩ to power optional remote control circuits.

### INPUT CONTROL

The Magna-Project controller has one main retract or extend input and two auxiliary retract and extend inputs. There is also a retract and extend safety input to reverse the motors in the event of an emergency.

### RETRACT/EXTEND INPUT

The retract/extend input on Terminal ⑥ can be connected to a push button switch or to the contacts of a relay. The other side of a switch or relay would be connected to the 24V AC output on Terminal ①.

**Note:** The retract/extend input on Terminal ⑥ can be connected to a push button switch or to the contacts of a relay. The other side of the switch or relay would be connected to a power source. The power source can be in the range of 5 to 30 volts AC or DC. The current draw is 0.5 mA per volt AC or DC applied across the retract/extend input and the extend/retract input common terminals. For example, using a 12-volt DC supply the current draw would be 6 mA. The input is activated by momentarily closing the switch or relay. This will start the motors if they are stopped and stop the motors if they are running. The direction the motors will go is the opposite of the last direction. The motors will continue to run until they are stopped, the limit is reached, or the 1.5 min. time-out occurs. The timer starts when the motors are started and resets when the motors are stopped.

Note: If an AC source is used it must be isolated from line voltage. When using this input in conjunction with the internal power supply, shorting 24 VAC to either Terminal ⑤ or ⑥ will activate the input. Only one line is necessary because of the grounding of the bridge on this input. When using an external power source the common ground is necessary. The ground or common can be hooked up to either Terminal ⑤ or ⑥, it doesn't matter. Do not use the 24 VAC COM in conjunction with the retract/extend command. The command will not work properly if the 24 VAC is used.

### RETRACT/EXTEND COM INPUT

This input is used in conjunction with the retract/extend input. If the device that is connected to the retract/extend input supplies a voltage (from 5 to 30 volts AC or DC), then the common or ground output of the device should be connected to the retract/extend COM on input Terminal ⑤. The common or ground connection is not used when using the internal power supply.



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## RETRACT AND EXTEND INPUT

The retract and extend inputs are used for controlling the direction of the lift from a device that has separate up and down outputs. Retract is on Terminal ③ and extend is on Terminal ④. These inputs are activated by shorting them to ground on Terminal ⑨. The motor will run in the selected direction unless the lift is at the limit.

## ERROR INPUTS

The error inputs are used to instantly reverse the motors in the event of an emergency. These inputs are active low, meaning they will cause an event when they are shorted to ground. A contact closure type switch can be connected to the retract error on Terminal ⑦ or extend error on Terminal ⑧ error inputs to the ground on Terminal ⑨ or ⑩. If the motors are running in the retract direction and the retract error input is shorted to the ground, the motors will instantly run in the extend direction. Conversely, if the motors are running in the extend direction and the extend error input is shorted to the ground, the motors will instantly run in the retract direction.

## LIMIT SWITCH RELAYS

The Magna Series controller has two relays that operate off the internal limit switches. These relays can be used to turn indicator lamps or other external devices on and off. The relay contacts are rated at 0.5A at 125 VAC and 1A at 24 VDC. The maximum operating voltage is 125 VAC and 60 VDC. The maximum operation current is 1A.

## RELAY INPUT

The wiper arms of the two relays are tied together and are available on Terminal ⑫. This Terminal should be tied to a power supply voltage or ground.

## EXTEND LIMIT RELAY OUTPUT

This output is available on Terminal ⑬. While the internal extend limit switch is closed, Terminal ⑬ will be shorted to Terminal ⑫, the relay input.

## RETRACT LIMIT RELAY OUTPUT

This output is available on Terminal ⑭. While the internal retract limit switch is closed, Terminal ⑭ will be shorted to Terminal ⑫, the relay input.

## SUMMARY

The following table shows how the inputs control the lift and how the relay outputs function. Note that the retract/extend input on Terminal ⑥ is active high (short to +12 volt DC on Terminal ⑩ or 24 volt AC on Terminal ② to activate) and the other inputs are active low (short to ground to activate).



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**CONTROLLER BOARD BOX**  
**TERMINAL FUNCTION DEFINITIONS**

TERMINAL NUMBER	FUNCTION	DESCRIPTION	WIRING OPTIONS	NOTES
1	24 VOLT AC	24 volt AC output		This is an internal power supply for powering external devices & Remote Controllers.
2	24 VOLT AC COMMON	24 volt AC common		Chief Mfg. offers the RC-10 Radio Frequency Remote Controller which runs off of this power supply.
3	GROUND	Ground		This is an internal power supply for powering external devices &/or used for initiating specific functions (Extend/Retract 5 or Voltage Sensor 7).
4	12 VOLT DC	12 volt DC		
5	EXTEND/RETRACT	Initiates movement if lift is static, or stops movement if lift is in motion. Direction of travel will be opposite of last direction of travel.	<u>To Operate using Internal Power Source</u> Connect terminals 3 & 6 with Jumper Wire. Connect Momentary Switch to terminal 4. Connect other line of Momentary Switch to terminal 5.	Function operates on momentary switch only.  Operating range is 5 – 30 Volts AC or DC.
6	EXTEND/RETRACT COMMON	Used in conjunction with Extend/Retract when using an external power source to initiate movement.	<u>To Operate using External Power Source</u> Connect External Power Supply's Common to terminal 6. Connect initiating signal to terminal 5.	NOT TO BE USED AS GROUND FOR FUNCTION OTHER THAN EXTEND/RETRACT TERMINAL 5.
7	VOLTAGE SENSOR	When terminal senses voltage, unit will extend.  When terminal senses cessation of voltage, unit will retract.	<u>Voltage Sensing</u> Connect positive lead to terminal 7. Connect Ground of switching device to terminal 8.  <u>Single-Pull/Throw Latching Switch</u>	Operating range is 5 – 30 Volts AC or DC.
8	VOLTAGE SENSOR COMMON	Used in conjunction with Voltage Sensor when using an external power source to initiate movement.	Connect terminals 3 & 8 with Jumper Wire. Connect first Switch Terminal to terminal 4. Connect other Switch Terminal to terminal 7.	NOT TO BE USED AS GROUND FOR FUNCTION OTHER THAN VOLTAGE SENSOR TERMINAL 7.
9	SERVICE EXTEND	Extends unit to maximum limit, bypassing normal-use travel setting.  Often used for servicing projectors in ceiling lifts.	Momentary or Latching contact to Ground terminals 3, 10, 13, or 20.	Feature not available on all models.  If using Latching Switch, be sure to disengage Switch prior to initiating any other function.
10	GROUND	Ground		

11	EXTEND	Extends unit to preset travel limit. Customer within a preset maximum range may adjust travel limits.	Momentary or Latching contact to Ground terminals 3, 10, 13, or 20.	If using Latching Switch, be sure to disengage Switch prior to initiating any other function.
12	RETRACT	Retracts unit to preset travel limit. Travel limits may be adjusted by customer within a preset maximum range.		If using Latching Switch, be sure to disengage Switch prior to initiating any other function.
13	GROUND	Ground		
14	EXTEND ERROR	Immediately reverses direction of travel when triggered while unit is extending.	Momentary contact to Ground terminals 3, 10, 13, or 20.	Chief Mfg. offers the SS-10 Pressure Sensitive Safety Strip to provide this function. Please specify how many inches required spanning entire pinch zone. The SS-10 must be ordered with the ST-15 Terminals.
15	RETRACT ERROR	Immediately reverses direction of travel when triggered while unit is retracting.		
16	EXTEND LIMIT RELAY	Closes set of internal dry contacts when unit reaches full extension.		RATED FOR 1 AMP @ 24 VOLTS
17	EXTEND LIMIT RELAY COMMON			
18	RETRACT LIMIT RELAY	Closes set of internal dry contacts when unit reaches full retraction.		RATED FOR 1 AMP @ 24 VOLTS
19	RETRACT LIMIT RELAY COMMON			
20	GROUND	Ground		

### WIRING THE RC-10

Connect white lead to terminal 1, red lead to terminal 2, and black lead to terminal 5. Place jumper wire from terminal 2 to terminal 6

### WIRING A MOMENTARY PUSH BUTTON

Connect terminals 3 & 6 with Jumper Wire. Connect Momentary Switch to terminal 4. Connect other line of Momentary Switch to terminal 5.

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